

process, both the horizontal components and vertical components of these centers of gravity can be used, or either the horizontal components or the vertical components of the centers of gravity can be used. As an example, a case in which only the horizontal components of the centers of gravity are used is taken, and will be described below.

In step S24, the attention-degree-information generating section JB1 obtains the center "fg" of gravity of the total area "fe" of the skin area "se" and the hair area "he" and the center "sq" of gravity of the skin area "se." In step S25, the attention-degree-information generating section JB1 calculates the difference obtained by subtracting the center "fg" of gravity of the total area "fe" of the skin area "se" and the hair area "he" from the center "sq" of gravity of the skin area "se."

Then, in step S26, the attention-degree-information generating section JB1 detects a face direction by using the difference obtained in step S25. More specifically, either of the following two methods are, for example, used to detect a face direction by using the difference. It is assumed that X indicates a difference, Y indicates a face-direction angle, and the angle of the face of the conference participant HM1 is set to 0 degrees when the conference participant HM1 is directed to the camera of the monitor device MDm. In one method used in step S26, prior to face-

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direction detection processing, data for the difference X and the face-direction angle Y is obtained in advance; the face-direction angle Y corresponding to the difference X is obtained, for example, as the average; their relationship is obtained as shown in Fig. 65; and the face-direction angle Y is obtained from the difference X obtained in step S25, according to the relationship shown in Fig. 65. In another method used in step S26, the face-direction angle Y is obtained from the following expression (10) by using the difference X obtained in step S25.

$$Y = \alpha \sin(X) \quad (10)$$

With the above flow, the attention-degree-information generating section JB1 detects the face direction of the conference participant HM1.

In still another method for detecting the direction in which the conference participant HM1 is directed, for example, an infrared ray is emitted to the face of the conference participant HM1; an infrared ray reflected from the face of the conference participant HM1 is received to form an image; and the face direction is detected from the image.

11. Structure of monitor device

An example specific structure of each of the monitor devices MD2 to MDn in the structure shown in Fig. 2 will be

described next by referring to Fig. 66 and Fig. 67. Fig. 66 is an outlined internal view of a monitor device MD, viewed from a side. Fig. 67 is an outlined elevation of the monitor device MD.

In the following description, for simplicity, a case is taken as an example, in which information related to conference participants HM1 to HMn is displayed on monitor devices MD1 to MDn in teleconference devices TCD1 to TCDn.

In the present embodiment, each of the monitor devices MD2 to MDn is provided, as shown in Fig. 66 and Fig. 67, with a cabinet 10; a speaker 13 disposed at the front (front of the monitor device MD) of the cabinet 10; a display section 15 disposed such that a screen 14 is directed in a predetermined direction (upper direction in the case shown in Fig. 66); a half mirror 12 for reflecting light emitted from the screen 14 of the display section 15 towards the front of the monitor device MD along a one-dot chain line B0 in the figure and for passing light incident from the front of the monitor device MD along a two-dot chain line BI in the figure; and a camera 16 (such as a video camera) supported by a supporting section 18 behind the half mirror 12. On the upper surface of the cabinet 10 in the monitor device MD, for example, a microphone 11 supported by a supporting section 17 is also provided.

The microphone 11 may be provided, for example, only

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